[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 35

[Docket No.: FAA-2010-0940-0001; Amdt. No. 35-9]

RIN 2120–AJ88

Critical Parts for Airplane Propellers

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The Federal Aviation Administration (FAA) is amending the airworthiness standards for airplane propellers. This action would require a safety analysis to identify a propeller critical part. Manufacturers would identify propeller critical parts, and establish engineering, manufacturing, and maintenance processes for propeller critical parts. These new requirements provide an added margin of safety for the continued airworthiness of propeller critical parts by requiring a system of processes to identify and manage these parts throughout their service life. This rule would eliminate regulatory differences between part 35 and European Aviation Safety Agency (EASA) propeller critical parts requirements, thereby simplifying airworthiness approvals for exports.

DATES: Effective [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

Affected parties, however, are not required to comply with the information collection requirement[s] in § 35.16 until the Office of Management and Budget (OMB) approves

the collection and assigns a control number under the Paperwork Reduction Act of 1995. The FAA will publish in the Federal Register a notice of the control number[s] assigned by the Office of Management and Budget (OMB) for this [these] information collection requirement[s].

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this action, contact Jay Turnberg, Engine and Propeller Directorate Standards Staff, ANE-111, Federal Aviation Administration, 12 New England Executive Park, Burlington, Massachusetts, 01803-5299; telephone (781) 238-7116; facsimile (781) 238-7199, email: jay.turnberg@faa.gov. For legal questions concerning this action, contact Vincent Bennett, FAA Office of the Regional Counsel, ANE-7, Federal Aviation Administration, 12 New England Executive Park, Burlington, Massachusetts, 01803-5299; telephone (781) 238-7044; facsimile (781) 238-7055, email: vincent.bennett@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for this Rulemaking

The FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart III, section 44701, "General requirements." Under that section, the FAA is charged with prescribing regulations promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the

Administrator finds necessary for safety in air commerce, including minimum safety standards for airplane propellers. This regulation is within the scope of that authority because it updates the existing regulations for airplane propellers.

I. Overview of Final Rule

Part 35 does not specifically define the term propeller critical part. Consequently, there are no requirements for design, manufacture, maintenance, or management of propeller critical parts. This rule defines and requires the identification of propeller critical parts, and establishes requirements to ensure the integrity of those parts.

II. Background

On December 20, 2006, the FAA tasked the Aviation Rulemaking Advisory Committee (ARAC) to develop recommendations that would address the integrity of propeller critical parts, as well as be in harmony with similar European Aviation Safety Agency (EASA) regulations. This rule addresses those recommendations, a copy of which can be found in the docket of this rulemaking.

A. Statement of the Problem

Propeller critical parts are not adequately addressed by current regulations. Presently, the FAA does not –

- Have a specific definition for a propeller critical part, or
- Require type certificate holders to identify propeller critical parts.

Consequently, propeller manufacturers are not required to provide information concerning propeller critical part design, manufacture, or maintenance.

B. Summary of the NPRM

Primary failure of certain single propeller elements (for example, blades) can result in a hazardous propeller effect. Part 35 does not specifically identify these

elements as propeller critical parts. Consequently, there are no requirements for design, manufacture, maintenance, or management of propeller critical parts. EASA, however, has regulations that identify a specific definition for propeller critical part, and regulations to reduce the likelihood of propeller critical part failures. These regulations, EASA Certification Specifications for Propellers (CS–P), are CS–P 150, Propeller Safety Analysis and CS–P 160 Propeller Critical Parts Integrity. The EASA regulations specifically require propeller manufacturers to identify propeller critical parts and provide adequate information for the design, manufacture, and maintenance of those parts to ensure their integrity throughout their service life. This FAA action establishes standards equivalent to the EASA regulations, thereby simplifying airworthiness approvals for export of these parts.

Safety Analysis (§ 35.15)

We proposed to revise § 35.15(c) to require the identification of propeller critical parts, and that applicants establish the integrity of these parts using the standards in proposed § 35.16. Section 35.15(c) refers to the failure of these parts as primary failures of ''certain single elements''. We recognize that a meaningful numerical estimate of the reliability of these parts is not possible, since over 100 million hours of service history on a part design would be needed to directly meet the probability requirements of the regulation. Current regulations accommodate this inability to provide a meaningful estimate by stating that these failures cannot be ''sensibly'' estimated in numerical terms.

Propeller Critical Parts (New § 35.16)

Our proposed § 35.16 would require the development and execution of an engineering process, a manufacturing process, and a service management process for

propeller critical parts. These three processes form a closed loop system that links the design intent, as defined by the engineering process, to how the part is manufactured and to how the part is maintained in service. Engineering, manufacturing, and service management function as an integrated system. This integrated systems approach recognizes that the effects of an action in one area would have an impact on the entire system. The proposed § 35.16 clarifies the wording of the EASA propeller critical parts requirement. Since the CS–P 160 use of the term ‘‘plan’’ might imply a requirement that a ‘‘part-specific’’ document would be required, the term ‘‘process’’ is used instead of ‘‘plan’’. In this context compliance will consist of a procedures manual that describes the manufacturer’s method(s) to control propeller critical parts.

The engineering, manufacturing, and service management processes should provide clear information for propeller critical part management. ‘‘Process’’ in the context of the proposed requirement does not mean that all the required technical information is within a single document. When relevant information exists elsewhere, the process documents may reference, for example, drawings, material specifications, and process specifications, as appropriate. These references should be clear enough to sufficiently identify the referenced document so as to allow the design history of an individual part to be traced.

The FAA published a notice of proposed rulemaking on December 1, 2011, requesting pubic comments [76 FR 74749]. The comment period closed on January 30, 2012.

C. General Overview of Comments

The FAA received three comments. One was from a repair station, Sensenich Propeller Service, and the others were from propeller manufacturers, Hamilton Sundstrand and Hartzell Propeller. The comments requested clarification on how the rule would be applied to propeller parts being serviced, old (legacy) propellers and part 45 Identification and Registration and Marking requirements. The comments did not suggest changes to the proposal.

III. Discussion of Public Comments and Final Rule

Sensenich Propeller Service asked would this rule require the replacement of airworthy parts that were found to have no defects. This rule would not. Nor does it require propeller manufacturers to revise manuals for existing certified propellers. This rule will result in manuals that are more informative with respect to propeller critical parts, when manuals are revised or developed for amended or new propeller certification programs.

Hamilton Sundstrand wanted to know if some sort of grandfather clause for legacy propellers was contemplated. This rule is applicable to propellers based on the propeller certification basis. Therefore, the rule will be applicable to new propellers, and may be applicable to propellers certified to earlier amendments, if the type design is changed sufficiently. See 14 C.F.R. § 21.101 Designation of applicable regulations. The current regulations accommodate older propellers as needed.

Hartzell Propeller, Inc., requested clarification on the applicability of paragraph (c) of § 45.15 Identification and registration marking for a propeller critical part. The propeller critical parts rule does address part marking. Propellers, propeller blades, and hubs are subject to the marking requirements of §§ 45.11 and 45.13. Section 45.15 (c) is

not applicable to critical propeller parts that do not have a replacement time, inspection interval, or related procedure specified in the Airworthiness Limitations Section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness.

IV. Regulatory Notices and Analyses

A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Act requires agencies to consider international standards and, where appropriate, they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector of $100 million or more annually (adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost

impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits that a statement to that effect, and the basis for it to be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. Such a determination has been made for this final rule. The reasoning for this determination follows.

Presently, airplane propeller part manufacturers must satisfy both the code of federal regulations (CFR) and the European Aviation Safety Agency (EASA) certification requirements to market their products in both the United States and Europe. Meeting two sets of certification requirements raises the cost of developing new airplane propeller parts, often with no increase in safety. In the interest of fostering international trade, lowering the cost of airplane propeller parts development, and making the certification process more efficient, the FAA, EASA, and airplane propeller part manufacturers worked to create to the maximum extent possible a single set of certification requirements accepted in both the United States and Europe. These efforts are referred to as harmonization.

Propellers contain critical parts whose primary failure can result in a hazardous propeller effect. 14 CFR part 35 does not currently identify what a propeller critical part is, and consequently, has no specific requirement(s) for their design, manufacture, maintenance, or management. EASA however, has regulations that identify what propeller critical parts are, and regulations to reduce the likelihood of propeller critical part failures.

This rule will revise § 35.15 and add a new § 35.16 to part 35 with EASA's ''more stringent'' CS–P 150 Propeller Safety Analysis and CS–P 160 Propeller Critical

Parts Integrity requirements. The FAA has concluded for the reasons previously discussed in the preamble, the adoption of these EASA requirements into the CFR is the most efficient way to harmonize these sections, and in so doing, enhance the existing level of safety.

A review of current manufacturers of airplane propeller parts certificated under part 35 has revealed that all manufacturers of such future airplane propeller parts are expected to continue their current practice of compliance under part 35 of the CFR and the EASA certification requirements. Since future certificated airplane propeller parts are expected to meet EASA's existing CS–P 150 Propeller Safety Analysis and CS–P 160 Propeller Critical Parts Integrity requirements, and this rule simply adopts the same EASA requirement, manufacturers will incur no additional cost resulting from this rule. Therefore, the FAA estimates that there are no more than minimal costs associated with this final rule.

The FAA, however, has not attempted to quantify the cost savings that may accrue from this rule, beyond noting that while it may be minimal, it contributes to a potential harmonization savings. Furthermore, we did not receive comments regarding this determination that this rule will have minimal cost with a possible cost savings to the industry.

The FAA has therefore determined this final rule is not a ''significant regulatory action'' as defined in section 3(f) of Executive Order 12866, and is not ''significant'' as defined in DOT's Regulatory Policies and Procedures.

B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Pub. L. 96–354) (RFA) establishes ‘‘as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.” The RFA covers a wide-range of small entities for profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The FAA believes that this rule would not have a significant economic impact on a substantial number of small entities for the following reason. The net effect of the rule is minimum regulatory cost relief. The rule requires that new propeller manufacturers meet the ‘‘more stringent’’ European certification requirement, CS–P 150, Propeller Safety Analysis and CS–P 160, Propeller Critical Parts, rather than both the U.S. and

European standards. Propeller manufacturers already meet or expect to meet this standard as well as the existing CFR requirement.

Given that this rule has minimal to no costs, could be cost-relieving, and as we received no comments on this determination for the NPRM, as the Administrator, I certify that this final rule will not have a significant economic impact on a substantial number of small entities.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 103–465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards, and where appropriate, be the basis for U. S. standards. The FAA has assessed the potential effect of this final rule and determined that it is in accord with the Trade Agreements Act as the rule uses European standards as the basis for United States regulation.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (in 1995 dollars) in any one year by State, local, and tribal

governments, in the aggregate, or by the private sector; such a mandate is deemed to be a ''significant regulatory action.'' The FAA currently uses an inflation-adjusted value of $143.1 million in lieu of $100 million. This final rule does not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid Office of Management and Budget (OMB) control number.

This final rule will impose the following new information collection requirements. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the FAA has submitted these information collection amendments to OMB for its review. Notice of OMB approval for this information collection will be published in a future Federal Register document.

Summary: On December 1, 2011, FAA published a notice of proposed rulemaking titled "Critical Parts for Airplane Propellers" (76 FR 74749). This activity contains new Paperwork Reduction Act recordkeeping requirements that were not addressed in that notice of proposed rulemaking, and which are addressed here. The rule will require that U.S. companies who manufacture critical parts for airplane propellers update their manuals to record engineering, manufacture, and maintenance processes for

propeller critical parts. There are currently three U.S. companies who will be required to create or revise their manuals to include these processes.

Public comments: We received no comments on information collection

Use: This information will be used by the propeller manufacturer to show compliance with the propeller critical parts requirements. This action would define what a propeller critical part is, require the identification of propeller critical parts by the manufacturer, and establish engineering, manufacture, and maintenance processes for those parts. The need and use of the information is to ensure the continued airworthiness of propeller critical parts by requiring a system of processes to identify and manage these parts throughout their service life.

Respondents: There are five propeller manufacturers that will be affected by the new requirement. Responses were provided by two of the manufacturers who have already prepared propeller critical parts manuals and are compliant with the final rule. The information provided by the two manufacturers was used to establish the paperwork required to show compliance with the propeller critical parts requirements for the remaining three propeller manufacturers.

Frequency: The information will only need to be collected once to show compliance with the FAA propeller critical part rule § 35.16. If the information is not collected, the propeller manufacturer will not be able to obtain a type certificate for the propeller.

Annual Burden Estimate: There will be no annualized cost to the Federal Government. Industry has informed the FAA that the one-time paperwork requirement will take approximately 40 hours and consist of 18 pages per manufacturer. The FAA

estimated 120 hours as the total hourly burden by taking the product of the number of affected U.S. manufacturers with the hourly burden. There will be a one-time cost of $3,555.60 per respondent which will occur on the effective date of the rule. The total cost for the three respondents is $10,666.80.

F. International Compatibility and Cooperation

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform our regulations to International Civil Aviation Organization (ICAO) Standards to the maximum extent practicable. The FAA has determined that there are no ICAO Standards that correspond to these regulations.

Executive Order 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of Executive Order 13609 and has determined that this action would have no effect on international regulatory cooperation.

G. Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph Chapter 3, paragraph 312f and involves no extraordinary circumstances.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The agency determined that this action will not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have Federalism implications.

B. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it is not a "significant energy action" under the executive order and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

VI. How To Obtain Additional Information

A. Rulemaking Documents

An electronic copy of a rulemaking document my be obtained by using the Internet —

1. Search the Federal eRulemaking Portal (http://www.regulations.gov);
2. Visit the FAA's Regulations and Policies Web page at http://www.faa.gov/regulations_policies/ or
3. Access the Government Printing Office's Web page at http://www.gpo.gov/fdsys/.

Copies may also be obtained by sending a request (identified by notice, amendment, or docket number of this rulemaking) to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9680.

B. Comments Submitted to the Docket

Comments received may be viewed by going to http://www.regulations.gov and following the online instructions to search the docket number for this action. Anyone is able to search the electronic form of all comments received into any of the FAA's dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

C. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document, may contact its local FAA official, or the person listed under the FOR FURTHER INFORMATION CONTACT heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit http://www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects 14 CFR Part 35

Air transportation, Aircraft, Aviation safety, Safety.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends chapter I of title 14, Code of Federal Regulations as follows:

PART 35—AIRWORTHINESS STANDARDS: PROPELLERS

1. The authority citation for part 35 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701–44702, 44704.

2. Amend § 35.15 by revising paragraphs (c) and (d) to read as follows:

§ 35.15 Safety Analysis.

* * * * *

(c) The primary failures of certain single propeller elements (for example, blades) cannot be sensibly estimated in numerical terms. If the failure of such elements is likely to result in hazardous propeller effects, those elements must be identified as propeller critical parts.

(d) For propeller critical parts, applicants must meet the prescribed integrity specifications of § 35.16. These instances must be stated in the safety analysis.

* * * * *

3. Add § 35.16 to subpart B to read as follows:

§ 35.16 Propeller Critical Parts.

The integrity of each propeller critical part identified by the safety analysis required by § 35.15 must be established by:

(a) A defined engineering process for ensuring the integrity of the propeller critical part throughout its service life,

(b) A defined manufacturing process that identifies the requirements to consistently produce the propeller critical part as required by the engineering process, and

(c) A defined service management process that identifies the continued airworthiness requirements of the propeller critical part as required by the engineering process.

Issued in Washington, DC, on January 8, 2013

Michael P. Huerta
Acting Administrator

[FR Doc. 2013-01041 Filed 01/17/2013 at 8:45 am; Publication Date: 01/18/2013]